

**Project 1: Journal Critique**

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Feb 7th, 2021

**Article 1:**

Fazel, F., Morris, T., Watt, A., & Maher, R. (2018). The effects of different types of imagery delivery on basketball free-throw shooting performance and self-efficacy. *Psychology of Sport and Exercise, 39*, 29–37. <https://doi.org/10.1016/j.psychsport.2018.07.006>

**Purpose**

The study aimed to examine the efficacy of different imagery delivery methods. The researcher compared the influence of Routine Imagery (RI), Progressive Imagery (PI), and Retrogressive Imagery (RETI), and a control cognition of free-throw shooting and free-throw self-efficacy (FTSE). The researchers hypothesized that all imagery interventions would lead to an overall increase in FTSE and performance enhancement compared to the control condition. They predicted that PI training would significantly improve free-throw shooting and FTSE than the RI method. Finally, they predicted that RETI would be more effective than other imagery delivery methods with performers who are still in a skill-learning phase.

**Methods*****Participants***

The participants for the study were 60 (34 males, 26 females) limited-skilled (intermediate) basketball players aged 18-37 years ( $M = 25.36$ ,  $SD = 6.29$ ). Their skill level was tested by their free-throw shooting pretest scores ( $M = 37.15$ ,  $SD = 6.16$  out of 60 points). They had no previous experience in systematic imagery training. Eleven participants withdrew from the study due to injury or personal matters.

***Design***

The design was independent groups in a. The forty-nine participants were randomly assigned three different imagery conditions or control condition. Sport Imagery Ability Measure

(SIAM) was implemented. Athletes imagined four sport-related scenes for sixty seconds. After each imagery session, participants would answer a twelve item questionnaire describing the vividness of the image. FTSE was tested on all participants before the intervention phase and at the end of week two and four. The participants followed an imagery-training program for twelve sessions (three times a week for four weeks). Free throw shooting was measured at the end of each intervention week.

### ***Measures***

The researchers used a demographic information form to gather the age, gender, years of basketball experience, and experience on imagery and mental skills. The Sport Imagery Ability Measure (SIAM) was administered to check the level of imagery ability before and after the intervention. The authors used an imagery manipulation check which consisted of asking the participants to rate how well they saw, heard, felt, and how well they performed the imagery they were instructed to do. This was tested on a 0-4 Likert scale where zero meant not at all and four meant very much. To test performance, a point system awarded three points for making it nothing but net, two points for making it after touching the rim, and one point for hitting the rim but not getting it into the basket. To measure self-efficacy, a scale for free-throw . Participants were asked how certain they were to successfully shoot 1/10, 2/10, all the way up to 10/10. The participants assessed their self-efficacy from 0% (totally uncertain) to 100% (totally certain).

### **Data Analysis:**

The authors analyzed the SIAM subscale using MANOVA for assuring no difference between participants' imagery ability. Furthermore, possible significant differences between conditions on free-throw shooting and FTSE across time, were measured with ANCOVA.

## Results

Pretest results show no systematic difference between conditions on the six key SIAM subscales. The imagery manipulation check showed that participants used imagery more effectively as the study progressed. In the performance outcome, PI and control condition showed no noticeable changes over the four weeks of the intervention,  $F(3.12, 80.14) = 50.87, p = .08, \eta^2 = .02$ . RETI and RI increased more than the other two conditions in weeks two through four. The RI does not show as much performance improvement as the RETI condition. Overall, differences between conditions in free-throw shooting performance increased in week 3 and week 4.

## Discussion and Conclusions

The research showed that all imagery participants demonstrated an increase in self-efficacy by week 4. However, the authors acknowledge certain limitations on the participants' experience, the setup of the imagery, and the study's length, as well as the small number of participants. Participants were asked to imagine playing in front of crowds, which made it unrealistic for them, and the length of the study appears to be short in relation to the time that took imagery to develop. Nonetheless, RETI was found to be the most effective delivery method. RETI was significantly higher than PI ( $p = .015$ ) and control condition ( $p = .009$ ). During Week four RETI participants improved more than PI ( $p < .001$ ), also than control condition participants ( $p = .001$ ), significantly higher than the control group ( $p = .03$ ), and PI ( $p = .03$ ). In conclusion, the findings extended the literature on imagery. The overall effectiveness of different imagery training methods on performance and self-efficacy varied significantly, where limited-skilled athletes benefited more from RETI than from RI, PI, and control conditions.

**Article 2:**

Haight, C., Moritz, S., & Walch, T. (2020). Time of imagery's effect on performance and self-efficacy in college baseball players. *Journal of Imagery Research in Sport and Physical Activity*, 15(1), 1–6. <https://doi.org/10.1515/jirspa-2020-0019>

**Purpose**

This research studied the relationships among the time of imagery use on performance and self-efficacy in college baseball players. This said, when does imagery cause the greater effect: before, during, or after practice. The authors of this article emphasize that imagery has already proved to be beneficial before practice but that there are studies proving success during and after practice.

**Methods*****Participants***

24 male intercollegiate (Division II) baseball players. Pitchers were excluded from the study. The participants' ages range from 18-22 years-old. Every player reported their level of batting on a Likert scale where 1 the athlete would describe himself as a pretty bad hitter, 3 was as an average hitter, and 5 meant he was a pretty good hitter. Fifteen out of the 24 were confident to be pretty good hitters.

***Measures***

A Self-efficacy Questionnaire was handed as a pretest. A ten item performance-based measure the participants' belief of their efficacy. The Sport Imagery Ability Questionnaire (SIAQ; Williams & Cumming, 2011) was handed to assess cognitive and motivational imagery ability using sport-specific images. And finally, a hitting performance assessment was introduced as a pretest. The assessment consisted of a hard-hit-ball total after a block of ten hits.

### **Procedure**

Before the study started, each participant completed a SIAQ questionnaire of 15-items designed to assess a person's cognitive and motivational imagery ability. Participants would record how easy or hard it was to generate images on a scale of 1-7 whereby one meant very hard, and seven very easy. Each participant hit a block of ten balls in calculating their average exit velocity. Then hit another ten balls in calculating how many they could hit hard out of ten. Participants completed the experimental part of the study, where imagery was performed before, during, or after blocks three and four. Every participant used an MG-M+ facilitative imagery script. This script would guide them through the imagery process in which the athlete would imagine in detail the circumstances in which they were about to execute a performance. The script was recorded and played to the participants.

### **Results**

The results of the repeated measures ANOVA for self-efficacy showed that the interaction was statistically significant ( $F(2,21) = 4.67, p < 0.05$ ). Each participant reported that they could follow the imagery script accurately and that it was straightforward to perform. They were able to feel and visualize the images mentioned throughout the script.

**Discussion and Conclusions**

The results showed that imagery actually decreased baseball hitters' performance and that the time imagery was used differentially affects self-efficacy when using it during or after practice increased self-efficacy, compared to using it before practice. Short-term imagery may enhance self-efficacy more than performance.

The authors acknowledge that the study has its limitations, such as the length of the study and the length for the imagery skill to build. The baseball hit is also an open skill categorized as one of the most challenging skills to master. The hitters were 40ft to the pitching compared to the 60ft of a real game pitching. The researchers consider using a ball machine rather than a pitcher for further studies to delete certain extraneous variables.

Using imagery increased self-efficacy scores from pre- to post-test for the during and after groups, but not for the before group. The study supports that using imagery can increase self-efficacy. The authors question if a warm-up session before imagery use. Furthermore, research should consider analyzing the psychological and performance results of players at different age levels.

### **Comparison/Contrast of 2 articles**

Fazel et al., (2018) studied different imagery delivery methods and their level of impact on self-efficacy. In contrast, Haight et al. (2020) focused on the timing of using imagery and its effect on self-efficacy. Both articles hypothesized that imagery, in general, would have a positive impact on self-efficacy and the results, with some exceptions, proved to be positive. Both studies had relatively small samples of the population. Fazel et al. (2018), had intermediate athletes, which enabled the research to determine the effect of imagery on performance and level improvement. On the other hand, Haight et al. (2020), counted with semi-professional baseball players. The difference in skills played a role in the outcomes of the studies. Regardless, self-efficacy was increased in both studies by enhancing imagery skills. Finally, both studies share a standard limitation which is the length of the study. Both studies conclude that imagery is a skill that the longer it is practiced, the more impact on self-efficacy and performance.

### **Personal Evaluation of Project**

These two articles give great insight into imagery and its impact on performance. I really like the Fazel et al., (2018) because it was done with intermediate level players whose mechanics may have not been as efficient as the baseball players. And even though that was the case, the authors found that imagery has helped the athlete perfect their mechanics through the practice of imagery. This means that a coach can enhance technique just by showing how is it done and reinforcing the skill through imagery. The project has raised curiosity to research the actual significant impact of imagery on self-efficacy.